# Rhode Island Water Resources Board
# Water Management System Implementation Team

## Meeting Minutes
Wednesday, August 4, 2004

**Action Items:**

Continue attempts to identify knowledgeable individual from MA to participate, coordinate & partner on water resource management bi-state issues. Jan Reitsma offered assistance on this action item.
Obtain and/or prepare monthly precipitation information. Ms. Emily Wild offered her assistance.
Obtain conservation map that shows protected areas.
Include concept of "resource capacity," as a central concept. The raw water quantity must include contaminated aquifers, wells, and rivers. Available water is is considerably less than the total quantity of raw water.
Research regional definitions for terms used in the water budget calculations.
Research and provide information on recharge rates for the Lower Blackstone River basin.
Research MA regional planning and buildout studies – do they exist? Time dimension? Etc.?
Assemble a technical subcommittee to work on raw water availability prior to the September meeting. The purpose of the meeting will be to review, translate and clarify the raw data.
Consider water quality, reuse and storage in water budget calculations.
Develop a statewide water management plan that includes local capacity, policy and solutions .
Consider groundwater potability of water in northern RI.

**Continue to submit comments, recommendations, and additional information to Kathy Crawley or Beverly O'Keefe on draft water budget materials: Chapter 1 and Chapter 2.**

1. **Welcome and Approval of Minutes -**
   Mr. Dan Varin called the meeting to order at 9: 15 a.m. He welcomed attendees to the fourth meeting of the Water Resources Board Water Management System Implementation Team. He requested approval of the July 7, 2004 meeting minutes. A motion to approve the minutes was made by and seconded. The minutes were approved with no corrections or additions. Mr. Varin next turned the meeting over to Ms. Kathleen Crawley, meeting facilitator.

   Ms. Crawley stated that today's meeting would focus on a discussion to develop a consensus on water quantity for planning and management purposes. She asked members to respond to the email and handout materials in a comprehensive manner. This work will allow the Team to move forward in developing an understandable water budget framework. She asked members to continue submitting responses and recommendations on *Chapter 1*- the context document reviewed during the last meeting. Staff will continue to refine the document based on the review comments. She stated that today's meeting will begin to assemble the watershed facts on how much water "there is." She referred members to the materials that will support today's discussion that include:

   July 22, 2004 Email Attachments and References
   August 4, 2004 Meeting Agenda
   July 7, 2004 Meeting Minutes
   Implementation Team Revised Meeting Schedule
   Draft2 Blackstone Fact Sheet

   August 4 Meeting Handouts (in addition to above materials)
   a. Adaptive Management Description (from EPA Watershed Analysis & Management Project, 12/03)
   b. MAP: Distribution of Lower Blackstone River basin sand & till deposits (USGS WRIR 03-4190)
   c. MAP: Streamflow gaging stations & public reservoirs w/Lower Blackstone (USGS WRIR, 2003)
   d. USGS Precipitation Data, 1889-2001, assembled from NOAA data
   e. USGS Average annual precipitation data in RI, 1940-1956
   f. Lower Blackstone River Basin Fact Sheet, August 4, 2004, 4 pages

Ms. Crawley introduced Ms. Emily Wild, of the U.S. Geological Survey office, who will present information on precipitation in the Blackstone River Basin. Ms. Wild stated that the hydrological cycle begins with precipitation that is most important for ground water recharge. Precipitation percolates down into the ground for recharge. She noted a conservative approach that assumes no precipitation has been used in the study. She referred to the precipitation handout materials (Handouts D and E above).

Members discussed the precipitation materials. Ms. Eugenia Marks asked if a calculation of recharge study was available. Dr. Anne Veeger noted that information on monthly precipitation including climatic variation over time would be useful in prediction. Mr. Henry Meyer referred to the work of Carl Sawyer, University of Rhode Island, who studied monthly evaporation rates. Ms. Crawley stated that the relationship of precipitation to the overall water budget is important, and should be included as an appendix in the report.

**2. Discussion on Lower Blackstone River Basin Essential Criteria for a Water Budget**

Ms. Crawley referred members to the two maps and the Fact Sheet to begin the discussion on the "what is" (the raw water availability) for the basin. She stated that the Lower Blackstone River basin is "surface-water driven (large bodies of surface water –rivers, lakes, pond, and streams) rather than ground-water driven." In the Lower Blackstone, the major water resources are surface water and ground water. What remains to be identified and developed are the groundwater resources. She opened the meeting for discussion.

**Statement:** It would be important to understand the population of the area. The census tract data should be used to calculate the population percentage in RI and MA, and whether they are under the same jurisdiction. It was noted that the Lower Blackstone River basin includes sections of MA and RI that is similar to the current water discussions occurring between GA and AL. Mr. Griffith stated that those discussions that are in the federal courts now are focused on what how much water GA can retain vs what AL claims.

**Recommendation:** Obtain agreement on water budget basic definitions; identify differences in the basic definitions (MA and region), realign if prudent.

**Discussion:** Members discussed the need to coordinate with MA on water resource planning initiatives. All assumptions on water resource availability should be clearly spelled out and coordinated with MA. Mr. Jan Reitsma noted that he attended a meeting recently, and it became clear to him that many are unaware of the current work of the RI WRB. The Blackstone Coalition is trying to obtain a meaningful commitment and dialogue that includes RI and MA key representatives. Communication with the MA Regional Planning group and other local and regional representatives will be important when we look at buildout and planning. Mr. John O'Brien noted that buildout in the Lower Blackstone River basin is based on certain land use trends. These detailed projections of RI communities may not be available in the MA communities. Mr. Dan Varin responded that there is a time dimension connected to these projections, and the time dimensions may not be comparable. Ms. Emily Wild reported that the Lower Blackstone study did not include the water resources of the Upper Blackstone.

**Facilitator:** Ms. Crawley agreed the quantity of water coming over the border is important, and hopefully, an understanding of those numbers can be established in the future. She stated that the first step is to identify how much raw water we have in the basin resources and that information is based on stream gaging information.

**Question:** How many municipal supplies are dependent on surface water as this will effect the fish habitat and health?

**Response:** Surface and ground water is separated in the report but there are difficulties in establishing who is using which resource (ground or surface water). The report calculates surface water as base flow plus safe yield per RI regulation. This is done at a period of little or no recharge during the summer months.

**Question:** Is safe yield based on the drought of record or 1% occurence? What is the time period for no recharge?

**Response:** The study uses a one-month time frame using the $75^{th}$, $50^{th}$, and $25^{th}$ percentiles in a regression analysis using 1957-1999 data. The distribution of flows is skewed such that an average year falls between the $50^{th}$ and $75^{th}$ percentile.

**Discussion:** Members discussed the use of percentiles to explain the available raw water data. Some people have equated the 25th percentile as drought conditions but Ms. Wild noted that the 25th percentile is the beginning of drought. Members felt the percentiles further confused this complicated data set. Finally, Ms. Veeger recommended that the percentile data be placed in an appendix to substantiate a simpler presentation on how much water is reasonable for planning purposes

**Discussion:** Members discussed the terminology to discuss raw water resources. Suggestions included taking into consideration source, quality and quantity: off stream or aquifer, total resource capacity, total volume, gross yield, total quantity of water, etc. Members felt strongly that the terminology and definitions must be clearly stated. Members did agree that the available resource is based on surface water = flow, and ground water = discharge. It was noted that the term "resource capacity" is close to capturing the raw water quantity. "All" water in a basin can include contaminated aquifers, wells, and rivers, and what is "available" is considerably less than the total.

**Statement:** The report measurement is based on Mgal/d (million gallons per day) that is more understandable to lay people.

**Recommendation:** Need to include water quality and supporting information on limits of use, treatment required, and instream flow requirements to support aquatic flow. Again, the regional definitions would be important when quanitfying the resource.

**Facilitator:** The definitions are key, and perhaps Alicia Good and Anne Veeger will help us with this.

**Statement:** The question could be "how many years out of 100, would you not have enough water?" If we use the 75th percentile, the answer is half the time there would not be enough water. If the 25th percentile is used then 25 years out of 100 there would not be enough water. The key question actually is "how many years out of 100 would make an acceptable risk?" It was noted that this question then brings politics into the equation. A flexible management system based on certain assumptions would help to establish priorities for planning purposes. For example, there could be a range that includes out of basin transfer. Members agreed that flexibility in the management system would be important, and would allow for flexible decision-making on the part of localities, water suppliers, etc. This would allow water suppliers to take steps to curtail discretionary water use.

**Statement:** Members discussed estimation techniques and the differences between ground and surface water. The discussion is interesting because when a watershed is looked at there is a pretty equal distribution of water availability. There is no magic pot of water. The difference in the southern part of the state is in the groundwater – there is not storage capacity thus all sectors (AG, IND, COM, RES) will all have to absorb cuts during periods of drought. Mr. Meyer noted small portions of clustering in some subdivisions vs the old cookie-cutter approach where entire subdivision is developed, has intensified the decrease of outside water use. Water consumption in Kingston has dropped to one half million gallons per day. A practical solution is needed on how to store water, and maybe this is the next step in the design of a practical water budget.

**Discussion:** Members discussed the resource and what an acceptable number would be. Finally, members agreed the numbers provided in the WRIR study are not absolute, and there may never be an absolute number but that there has to be a starting point in order to explain the "what is."

**Facilitator:** Water supply demand management is important as is the capacity of the water suppliers. First, it is important to understand the capacity of the resource. We need to quantify what the resource is. We need to establish what numbers, from this study, are acceptable numbers to begin with.

**Statement:** Mr. Dan Varin agreed with Mr. Meyer's statement on the capacity of the water suppliers to send out water but that these decisions are local decisions and not the state's to decide. We must come to a determination in order to help local municipalities make decisions about what they do have as a resource. It is important to look at the demand management questions.

**Statement:** We do need to develop a state water supply management plan that will allow us to provide local systems numbers related to their existing capacity. This process will lay the groundwork and process where the state can say "you are at capacity, and you will impact adjacent communities." We are developing a system, and we have to have a solution and a policy on the resource.

**Statement:** In terms of storage capacity, it will be important to be aware of RI geology and contingency costs of alternate land use. We should review the potability of groundwater resources in the northern parts of the state.

**Recommendation:** I recommend that we adopt these numbers from the WRIR report with the qualification that these numbers should not be used for establishing minimum or maximum levels. **(This will be reviewed, written up and distributed).**

**Question:** If the 25$^{th}$ percentile is unacceptable, why not use the 10$^{th}$ percentile figure?

**Response:** This will vary depending on the gage used (Pawcatuck).

**Break:** A ten-minute break was called at 10:23 am. The Implementation Team reconvened at 10:35 am.

**Facilitator:** Ms. Crawley reconvened the meeting, and introduced Ms. Beth Collins who provided an update on the Blackstone Basin Buildout.

**Ms. Collins:** Beth reported on the status of the Blackstone buildout. She stated that the future land use map is used for zoning. During the month of August she intends to conduct structured interviews with all municipal planners. The results of these interviews will be assembled, and she intends to report back to the team on the results of the buildout at the October meeting.

**Facilitator:** Ms. Crawley briefly summarized today's meeting by stating that staff will look at resource capacity and the percentiles, and try to translate the information into layman's terms. She noted today's discussion focused on the first page of the Fact Sheet, and that the remaining 3 pages provide increasing detail on the resource. She encouraged members to respond to the meeting materials with recommendations over the next month. She especially thanked the large representation of planners and hydrologists who attended today's meeting. She asked members if there were additional comments or questions.

**Question:** Mr. Jan Reitsma noted that the UMASS/USGS project had received funding for their proposal, and asked if this work may contribute to the current Implementation Team project.

**Facilitator Reponse:** The WRB has approached the UMASS/USGS team and looked at their proposal which focuses on water quality issues. We plan to continue the dialogue as the project develops. She noted that there are additional WRB studies underway. A Blackstone model report will be ready in the 2007-2008 time period that will provide information that will help the WRB/USGS partnership to refine the numbers and provide additional detail to the water resource questions. Discussion today has identified the need to assemble a small technical subcommittee to work on further translations of the technical data, and I will be assembling a group within the next two weeks to work on these identified areas.

**Comment:** Thank you for this response. We wonder why these things aren't coordinated more often. This watershed modeling is critical in terms of flow, quantity and quality.

**3. Adjournment**

Mr. Dan Varin thanked everyone for their participation in today's meeting, and stated that staff can produce the information, and the Team can tell us how to use the information, how to consider what's available in the process, where we need more. Since Al. Bettencourt was unable to attend today's meeting, he stated that he has to speak out on his behalf. He directed attention to the Total Water Use Table located on page 3 of the Fact Sheet stating Al would note that a small part of the total water is for agricultural water use in the Lower Blackstone basin (.0.179 in RI) and includes mostly orchards, 1% or less. This is not an agricultural-intensive area. I certainly would not want to assume that he would not have something to say on the matter.

He stated that he watches the work of the WRB staff. Over time, I, Bob Griffith, and Juan Mariscal when he was working in the office have had the same opportunity, and I am confident that Kathleen and Beverly can keep up with your wishes and needs in this process. They keep massaging and cleaning out the material, investigating new sources and questions. Without them we would be somewhere before square one.

Mr. Varin pointed out that today is Paul Sams, General Manager, last meeting as his official retirement date is August 28, 2004, and I hope he continues to participate in activities like this. He stated that Paul's management and organizational abilities, and everything that goes on at the Board, and his ability to work with other governmental agencies, private parties and everybody else who has anything to do with water has been key to

turning the WRB's attention around, expanding it's scope, and improving the quality of work that's done there. It just has to be noted as you are seeing a small part of this in this process. He cited one example where a necessary and costly update of the Big River land use management plan was supported by industry, AMGEN, and that this type of leadership is essential to successful water resources planning and management. This type of leadership has been essential to everything that goes on at the WRB, and other places as well.

Mr. Sams thanked Mr. Varin and the outstanding staff for their work on behalf of the WRB. He stated he was gratified and thankful to have worked with the leaders of water resources in Rhode Island. He thanked members for their time and commitment in this and other valuable subcommittees and workgroups. He noted that while there is no perfect solution to water resources management, there are good decisions that help to manage and preserve the water resources for all Rhode Islanders.

Mr. Varin asked for a motion to adjourn. The motion to adjourn was made and seconded. The meeting was adjourned at 10:50 AM.

The next meeting is scheduled for Wednesday, September 1, 2004.

Respectfully Submitted,

Beverly O'Keefe
RI Water Resources Board

Meeting Attendees:

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| Bray | Erin | Brown University |
| Collins | Beth | RI Economic Policy Council |
| Coria | Alexandra | Brown University |
| Crawley | Kathy | RI Water Resources Board |
| Eduoards | Chantale | RI House Fiscal |
| Dzykewicz | Andrew | RI Economic Policy Council |
| Flynn | Kevin | Cranston Planning |
| Garceau | Tim | Pawtucket DPR |
| Good | Alicia | RI Dept. of Env. Mgt. - Water Resources |
| Griffith | Robert | RI Water Resources Board |
| Kilduff | Bob | Providence Water Supply Board |
| Mariscal | Juan | Warwick Sewer Authority |
| Marks | Eugenia | Audubon Society of RI |
| Meyer | Henry | Kingston Water District |
| Murray | Vin | South Kingstown Planning |
| O'Brien | John | RI Dept of Admin-Statewide Planning |
| OKeefe | Beverly | RI Water Resources Board |
| Reitsma | Jan | General Public |
| Sams | Paul | RI Water Resources Board |
| Sobel | Allison | Brown University |
| Varin | Daniel | Chairman, RI Water Resources Board |
| Veeger | Anne | Univ. of RI-Geosciences |
| Ward | Harold | Pawcatuck Watershed |
| Wild | Emily | US Geological Survey |